

**DECISION NOTICE
AND
FINDING OF NO SIGNIFICANT IMPACT**

***SUSTAINED REDUCTION PLAN
FOR
NON-NATIVE GOATS AND SHEEP
WITHIN
VIRGIN ISLANDS NATIONAL PARK***

**U. S. D. I. National Park Service
Virgin Islands National Park
St. John, U. S. Virgin Islands**

INTRODUCTION

This Decision Notice (DN) and Finding of No Significant Impact (FONSI) documents the decision of the National Park Service (NPS) to adopt an Environmentally Preferable Alternative program for the sustained reduction of non-native domestic goats and non-native domestic sheep within Virgin Islands National Park (VINP), and determines no significant impacts on the human environment are associated with the decision.

The FONSI is based upon a Draft Environmental Assessment (EA) released in December 2003, and comments of agencies and the public on the EA. The purpose of the EA was to evaluate the effects of a proposed sustained reduction program for goats and sheep, both of which are non-native, from within Virgin Islands National Park. The EA has been prepared in accordance with the National Environmental Policy Act (NEPA) and NPS policy and guidelines. The Draft and Final EA's were available for public review at the following locations:

Visitor Center
Virgin Islands National Park
St. John, VI

Elaine I. Sprauve Public Library
St. John, VI

Enid M. Baa Public Library
St. Thomas, VI

National Park Service Headquarters
Christiansted; St. Croix, VI

The Final EA may also be viewed at www.nps.gov/viis or www.friendsvinp.org. Printed or electronic copies of the Final EA can be requested from the National Park Service at (340) 693-8950 extension 224 or at Rafe_Boulon@nps.gov.

The NPS decision is to select Alternative 2 in the Final EA.

BACKGROUND

People have accidentally or intentionally introduced hundreds of non-native species into natural communities worldwide, and while many die out, some persist and become pests. It is now widely accepted the current species extinction rates are dramatically higher than background rates; most current extinctions can be directly attributed to human activity; and for ethical, cultural, aesthetic and economic reasons, the current extinction rate is cause for considerable concern. Human-caused extinctions can be roughly divided into four broad categories: non-sustainable use of resources, habitat destruction, pollution, and introduced non-native species.

Results of the first three categories are often acute and directly affect human and native wildlife welfare on an observable time scale. Human-related impacts have made them the focus of public environmental concern. The introduction of non-native species has received less publicity and scientific attention; however, introduced species are responsible for 39% of all recorded animal extinctions since 1600 for which a cause could be attributed (Treshy and Croll 1994). Thus, some introduced species impacts are irreversible and equally devastating compared with other categories. Once established, introduced species often become permanent ecological features until their intentional removal.

Native wildlife in island ecosystems is particularly vulnerable. Of the 484 recorded animal extinctions since 1600, 75% have been island endemics. Introduced species were completely or partially responsible for 67% of these extinctions (based on the 147 island species for which the cause of extinction is known). Islands are also important for the conservation of biodiversity, as well (World Conservation Monitoring Centre 1992).

Impacts to native plants and native plant communities from goats and sheep have been well documented in the literature and those impacts would continue to affect island vegetation including endemic and federally listed plant species (Baker and Reeser 1972; Coblenz 1978 and 1980; DieterSpatz *et. al.* 1973; Katahira and Stone 1982; Mueller-Dombois *et. al.* 1975; Scowcroft and Hobdy 1987; Stone *et. al.* 1992; Stuht 2001; Taylor and Katahira 1988; and Yocum 1967).

Non-native goats and sheep have established breeding populations throughout all habitat types of the Park. Many wildlife ranchers keep goats and sheep in herd sizes ranging from a few animals to several dozen. Small herds of sheep sometimes mix with goat herds, but sheep are considerably less common than goats. The Park has experienced goat and sheep grazing.

The original areas of goat encroachment included: portions of Leinster Bay near the Johnny Horn Trail; Bordeaux Mountain area above and including much of the Lameshur watershed; the East End near the NPS Firing Range; the upper-eastern portion of Hawksnest Bay; and the Ram Head area. By the early 1990s, free ranging goat herds were established in Mary's Point and Brown Bay. In 1999, 5 goats were abandoned at Lind Point. Finally, in the summer of 2000, approximately 12 goats were abandoned on the North Shore Road immediately inside the Park boundary above Cruz Bay. Sheep have occurred within large goat herds at Brown and Leinster bay since the late 1990s.

In FY 2000, Virgin Islands NP installed about 100 animal-proof trash containers (at a cost of about \$75,000) at all Park sites except the major concession operations at Trunk Bay and Cinnamon Bay to collect refuse. In 2002, the NPS spent \$30,000 to purchase and install an additional 20 animal-proof trash containers at major concession locations (eight at Trunk Bay and twelve at Cinnamon Bay) to collect refuse. Also in 2002, NPS constructed a one mile long donkey exclusion fence with four barbed-wire

strands around the perimeter of the Cinnamon Bay Campground at an estimated cost of \$67,000 but not designed to exclude goats or sheep. A design necessary to exclude goats and sheep was prohibitively expensive; donkeys were the non-native animals causing the greatest campground problems.

PUBLIC INVOLVEMENT

Implementation of the preferred alternative from the EA could affect Park visitors, commercial operators, island residents, the integrity of natural and cultural resources, and the status of listed threatened and endangered species. Therefore, public participation was a critical element in the preparation of the EA. The public involvement process for the EA provided three distinct phases of public information: (1) scoping of issues to be analyzed in detail in the EA, (2) Draft EA, and (3) Final EA.

The Draft EA was released for 60 days of public review on December 15, 2003, with a press briefing conducted in conjunction with its release. Public review opportunities included:

- A public scoping meeting was held at the Legislative Conference Room on August 12, 2003. Personnel from the Territorial Government of the United States Virgin Islands (USVI) attended including the Virgin Islands Department of Agriculture (VIDA), and the Department of Planning and Natural Resources (DPNR); Friends of the VINP and the St. John Community Foundation, as well as several media representatives. About 40 persons attended the two-hour meeting.
- Various discussions between the NPS and VIDA, DPNR, and VI Police Department (VIPD), and the University of the Virgin Islands (UVI) Cooperative Extension Service, regarding livestock regulations in the USVI.
- Distribution of more than 30 copies of the Draft EA.
- Providing a printed copy of Draft EA in libraries on St. Croix, St. Thomas and St. John.
- Developing news stories describing the effects of exotic animals to VINP's wildlife, flora and cultural resources published in the Park paper and several local newspapers and radio stations.
- Briefings with NPS staff, Friends of VINP, staff of the USVI Department of Planning and Natural Resources, USVI Department of Agriculture, and other key community leaders and interest groups.
- Posting of the Draft and Final EA and newsletter summary on the web sites for VINP and the Friends of the VINP.

Two comments were received during the public review period for the Draft EA. Issues included:

- general comments of support
- use of fertility control
- boundary fence installation and maintenance by private livestock owners
- the mosaic of Park and private lands
- use of dogs to locate animals
- use of live traps preferentially over kill traps
- use of leg snares to trap animals
- how collected animals will be euthanized and,
- removal of goats to a United States wildlife sanctuary.

Based upon comments on the Draft EA, modifications were made to the Preferred Alternative. NPS responses are provided in an errata sheet to this DN/FONSI.

ALTERNATIVES ANALYZED

Range of Alternatives

Two alternatives, including the “No Action, Continue Current Level of Management” Alternative and the NPS Preferred Alternative, were analyzed in detail in the EA. These alternatives were developed from issues raised in internal and public scoping, and based upon the purpose and significance of VINP. Five alternatives were considered but eliminated from detailed analysis in the Draft EA. The EA discloses the potential environmental consequences that may result from implementation of various alternative management strategies. Comments received during public review of the Draft EA were considered in preparation of a Final EA and this FONSI/DN.

Alternative 1. No Action, Continue Current Level of Management. Under Alternative 1, non-native goats and sheep would continue to flourish unabated throughout VINP. No reduction efforts would be used on goats or sheep within VINP. Their population numbers would continue to rise with the availability of food resources and the documented trend to move into new areas would continue within VINP. Impacts to native plants and native plant communities from goats and sheep have been well documented in the literature and those impacts would continue to affect island vegetation including endemic and federally listed plant species (Baker and Reeser 1972; Coblenz 1978 and 1980; DieterSpatz *et. al.* 1973; Katahira and Stone 1982; Mueller-Dombois *et. al.* 1975; Scowcroft and Hobdy 1987; Stone *et. al.* 1992; Stuht 2001; Taylor and Katahira 1988; and Yocum 1967). Under the No Action alternative, NPS would continue to animal-proof trash receptacles, dumpsters and buildings at campgrounds, day use sites, concession areas, Park overlooks, and employee housing areas and collect trash on a regular basis.

Alternative 2. Reduce Goats and Sheep within VINP and Sustain a Near-zero Population, the NPS Selected Alternative. Under Alternative 2, the NPS Preferred Alternative in the EA, non-native goats and sheep will be controlled within VINP lands on St. John, Hassel Island, and St. Thomas, (should goats or sheep move into NPS property on St. Thomas). The goal will be to humanely and substantially reduce their population throughout the Park, and sustain the reduction to zero or near-zero through monitoring, periodic removals, selective fence installation and maintenance, and ongoing information dissemination through partnerships with governmental and non-governmental organizations.

Because fewer than 50 sheep live in the park, a majority of collection techniques will be applied exclusively to goats. Throughout the Draft and Final EA, goats and sheep are mentioned together, however goats are in the majority; since both species exist in (some of) the same herds, treatment for both in a single compliance document and control plan was logical. A central theme of the control plan is to routinely educate residents, visitors, wildlife ranchers, NPS employees and concessionaires. A comprehensive methodology is preferable to a single control method for efficient, humane application throughout remote, diverse and challenging subtropical habitat types and extremely steep topography. Particular emphasis will be placed on preventing new animals from entering the park, as well as compliance with the VIDA Animal Registration and Impoundment Program. Over time, more resources will be focused on preventing non-native wildlife encroachment into the Park, instead of removal from the park. Initial control efforts focus on both removal and prevention. Sustained partnerships and their periodic renewal, both formal and informal, are crucial themes for a successful, long-term program, and

recur throughout the EA. These coalitions are necessary to ensure routine education and information development and dissemination.

The NPS and the United States Department of Agriculture (USDA) Animal Plant Health Inspection Service (APHIS) Wildlife Services (WS) Division, as lead cooperating agencies, will conduct the initial reduction of non-native goats and sheep. Each agency will have a Program Coordinator and this team will manage and supervise the program. VIDA and DPNR will play advisory roles to plan and implement the reduction, mitigation and monitoring components of the program. VIDA through a Memorandum of Understanding (MOU) with the NPS will provide a valuable role to live trap and remove goats and sheep from VINP under the direction of the NPS/APHIS Program Coordinators. The NPS will assist VIDA to implement and promote the VI Animal Registration and Impoundment Program. All personnel involved with this program will follow the measures described in the FONSI: for the safety of island residents, visitors and wildlife personnel; the humane capture and euthanization (if necessary) of goats and sheep, and; for the protection of natural, cultural and wetland resources.

Prior to implementing a Park-wide goat and sheep reduction program, goat and sheep ranchers will be requested by letters and press releases to remove their livestock from within VINP. Ranchers will be required to remove their animals within a 60-day period before implementation of the direct reduction program. Following this 60-day amnesty period, goats or sheep residing within the Park will be considered abandoned, and subject to collection to protect the Park's vegetation, wetland and cultural resources from the negative effects of free-ranging livestock (Code of Federal Regulations, Title 36, Part 2.15(5)(c): pets or feral animals). The Virgin Islands Code, Title 19, Section 2616 (a): "any animal found running at large, or tied on public property or on private property without the consent of the owner of said property, shall be taken up by animal wardens and impounded in an animal shelter, and there confined for disposition in accordance with the provisions of this subchapter."

The primary tools for goat and sheep collection include live traps, relocation and invariably some shooting. Limited use of tracking ("baying") dogs, snares and "Judas" goats represent secondary reduction methods, which may be considered at a future time if primary methods fail to reduce the goat populations. During the peak period of the goat and sheep reduction program, there will be an increase in personnel on St. John Island of 2 to 4 people. However, they will be the same individuals contracted by the NPS to implement the sustained reduction of non-native hogs from VINP. They will be housed generally in government housing on NPS property. A standard-sized pickup truck will be the primary mode of transportation. All-terrain vehicles may be used incidentally for transportation, one or two horses may be considered for limited field operations in the future. Temporary tent camps may be established to facilitate operations in remote areas; minimal and ephemeral impacts are possible and the resident NPS Archeologist will authorize the sites on a case by case basis.

The techniques and tools for achieving the reduction goals are consistent with goat and sheep reduction models on Santa Rosa Island and Santa Cruz Island (NPS 2001) in Channel Islands National Park and Hawaii Volcanoes National Park (NPS 1999).

The goal will be to reduce substantially goat and sheep populations within VINP and sustain a near-zero population. This will be accomplished through a three-phase approach. In the first phase, administration, infrastructure acquisition, and selective fencing may occur along sections of the boundary. In the second phase, techniques such as baits, traps, and shooters will be used to reduce populations throughout the Park. In the third phase, the NPS will monitor for and periodically remove remnant goats and sheep, provide resource education, community outreach, information dissemination, and record keeping, maintain fences and renew formal partnerships.

Phase I will require approximately one year to complete once completing environmental compliance. This year will be used to hire or contract with personnel, purchase supplies, construct traps, establish communications, and possibly fence some of the most vulnerable long-term monitoring plots. NPS may also begin selective fencing near limited areas of the boundary where goats and sheep can easily reenter the Park (Herman Farm, L' Esperance and Catherineberg, Bordeaux Mountain, Hawksnest, Cinnamon, Ram Head and Lameshur) if well-used wildlife trails can be found. Funds may be made available for island livestock ranchers to install or repair their fences during Phase I or in the future.

A relatively fast initial goat and sheep population reduction campaign is envisioned in Phase II, possibly approximately 2 to 3 years. Baiting in conjunction with snares, single-capture and corral-style live-traps may be employed throughout each targeted watershed. A majority of animals are expected to be live-trapped and removed. These will be released to local wildlife ranchers who comply with territorial animal registration requirements; and some will be utilized for personal consumption. Areas of high goat (and to a much smaller degree sheep) concentrations such as Brown, Leinster Lameshur and Reef bays, Hurricane Hole, and Ram Head, will be selected for initial animal removal. Areas with small populations will also be selected for initial removal efforts such as Lind Point, Mary Creek, Hawksnest and Cabrittehorn Point. Goat and sheep movements will determine where the collection efforts must then be focused. Biological and ecological data will be recorded from each animal. Local volunteers may assist contractors in various control efforts.

Phase III will be an indefinite period of scheduled and systematic monitoring throughout NPS land for goat and sheep signs. Monitoring efforts for the presence or absence of goats and sheep is crucial to locate and humanely remove animals from throughout the Park, and protect the sensitive natural, cultural and wetland resources. If goat, sheep or their foraging and trampling signs become evident in an area, authorized and certified NPS and (possibly) VIDA personnel will humanely remove the animals as described in Phase II. An extensive and comprehensive public education campaign is necessary with key government and NGOs to accomplish the long-term program objectives. During this phase of indefinite duration, the focus will shift to preventing non-native wildlife encroachment and if successful, few animals will require control from within VINP.

Environmentally Preferable Alternative

In accordance with Council on Environmental Quality (CEQ) regulations, Alternative 2 is identified as the Environmentally Preferable Alternative. The Environmentally Preferable Alternative is defined by CEQ as the alternative "that will promote the national environmental policy as expressed in NEPA's Section 101. Generally, this means the alternative causing the least damage or most benefit to the biological and physical environment and best protects, preserves and enhances historic, cultural and natural resources" (46 CFR 18027, *Forty Most Asked Questions Concerning CEQ's NEPA Regulations*).

Section 101(a) of NEPA recognizes the importance of environmental quality to the overall welfare of man, and declares a continuing policy to promote conditions under which man and nature can exist in productive harmony. Section 101(b) establishes a continuing responsibility for the Federal government to improve and coordinate Federal plans, functions, programs and resources to:

- fulfill the responsibilities of each generation as trustee of the environment for succeeding generations;
- ensure for all Americans safe, healthful, productive, and esthetically and culturally pleasing surroundings;

- attain the widest range of beneficial uses of the environment without degradation, risk of health or safety, or other undesirable and unintended consequences;
- preserve important historic, cultural, and natural aspects of our national heritage and maintain, wherever possible, an environment supportive of diversity and variety of individual choice;
- achieve a balance between population and resource use to permit high standards of living and a wide sharing of life's amenities; and
- enhance the quality of renewable resources and approach the maximum attainable recycling of depletable resources.

According to NPS policy (Director's Order 12), the Environmentally Preferable Alternative is the alternative to best promote the national environmental policy expressed in NEPA Section 101(b), which includes alternatives to accomplish the goals from this section (listed above).

Because, in comparison to Alternative 1, Alternative 2 better restores the natural conditions throughout the park, it is considered the Environmentally Preferable Alternative. Alternative 2 best responds to NPS mandates to preserve and protect unimpaired the significant resources for which VINP was established, and allows for appropriate use and enjoyment by the public. Potential adverse effects on natural and cultural resources will be reduced over those in the No Action Alternative. By reducing the population of non-native goats and sheep inside the Park, adverse impacts on visitors, residents and natural and cultural resources will decrease. The proposed reduction program will produce minimal or no damage to Park resources or threats to visitor or employee safety. Collectively, goat and sheep populations pose a large threat to the native natural resources, long-term resource management programs of the Park, NPS mandates, and the health and safety of park visitors.

The Environmentally Preferable Alternative will cause the least damage to the biological and physical environment and best protect, preserve and enhance the Park's historic, cultural, natural and wetland resources. Alternative 2, best fulfills the NPS statutory mission and responsibility; best meets the purpose and need for a Sustained Reduction Plan for Non-native Goats and Sheep; best responds to the issues identified through public and agency scoping; and achieves the best balance of environmental protection, visitor experience, public safety, economic well-being and other factors.

DECISION AND RATIONALE

Rationale

With the exception of bats, the VINP is presently inhabited by numerous species of non-native mammals which produce severe impacts on many indigenous plant and animal species, visitor threats, and compromise resident and employee safety (Appendix B). Feral or wild mammals include white-tail deer (*Odocoileus virginianus*), donkey (*Equus asinus*), domestic goat (*Capra hircus*), wild hog (*Sus scrofa*), domestic sheep (*Ovis aries*), cattle (*Bos taurus*), West Indian mongoose (*Herpestes auropunctatus*), tree rat (*Rattus rattus*), Norway rat (*Rattus norvegicus*), house cat (*Felis catus*), domestic dog (*Canis familiaris*), and house mouse (*Mus musculus*). Many, if not all of these species, also threaten visitor experience, health and safety. Increasing populations of these species are seriously affecting native species of plants and animals. Additionally, introduced species of birds, amphibians, reptiles, insects and plants are affecting the fragile environment (see Appendix B, List of Introduced Animals to St. John Island).

Large numbers of native flora and fauna are threatened each year to relatively small non-native goat and sheep populations. Small islands typically have both smaller resident wildlife populations and lower species diversity. This is particularly true on very small and highly fragmented islands such as St. John, because most negative impacts are concentrated and accelerated when compared with similar impacts to a larger landmass. Therefore, the cumulative impacts associated with these increasing wildlife threats are substantial.

The NPS is mandated to remove animals determined to be injurious to native flora and fauna. Management of populations of exotic plant and animal species, up to and including eradication, will be undertaken whenever such species threaten Park resources or public health and safety (NPS Management Policies 2001, Page 4.4.4.2). High priority will be given to exotic species management with substantial impacts on Park resources, and those who can feasibly be controlled (NPS Natural Resources Management Guideline 1991, Chapter 2, Page 286).

A single, rapid population reduction effort is necessary to reduce the present populations to an acceptable level. Because additional non-native goats and sheep can enter the Park from adjacent lands on public roads, an acceptable population size (limit) must be established. The population must be periodically censused or threshold visual estimators developed to ensure the program goals are achieved.

Eradication is impractical and impossible as a feasible alternative due to the size of St. John and the large number of inholdings. Therefore, efforts will focus on sustained control of the non-native goat and sheep populations and a concomitant reduction in their impacts on natural and cultural resources. To achieve this goal, a combination of techniques will be initiated in three phases. In Phase I, administration, infrastructure acquisition, and selective fencing will be employed. Phase II requires techniques to humanely reduce populations throughout the Park. Phase III includes indefinite monitoring, partnership renewal, education and periodic removal; with a central focus to prevent future encroachments

Decision

The NPS decision is to select “Alternative 2, Reduce Goats and Sheep within VINP and Sustain a Near-zero Population,” as described in the Final EA. The NPS in cooperation with the USDA’s Animal Plant Health Inspection Service / Wildlife Services Division, and the VIDA will conduct a site-specific non-native goat and sheep population reduction program using a combination of trapping, shooting and fencing within VINP. The goal will be to substantially and humanely reduce non-native goat and sheep populations within the Park, and to sustain near-zero populations. This will be accomplished through a three-phased approach (a complete description of the implementation plan is found on pages 19 to 27 of the Final EA). Under this NPS Preferred Alternative, the sustained reduction program will occur in the three phases detailed below.

Phase I – Administration, Infrastructure Acquisition and Selective Fencing (Approximately 1 year)

This phase will require approximately one year to complete once environmental compliance is met. This year will be used to hire or contract with personnel, purchase supplies, construct traps, establish communications, and fence especially vulnerable long-term monitoring plots. NPS may also begin selective fencing near limited areas of the boundary where goats and sheep can easily reenter the Park.

Funds may be sought for island livestock ranchers to install or repair their fences.

Consensus building was established before and strengthened during the NEPA process, continues into Phase I and must be sustained indefinitely. A strong bridge will be maintained between the NPS, USDA-Wildlife Services and VIDA. Key groups or officials may reinforce this crucial bridge, including Friends of VINP, the St. John Community Foundation, VI Department of Planning and Natural Resources, the University of the Virgin Islands Cooperative Extension Service, the Environmental Association of St. Thomas and St. John, the St. John Rotary Club, and the Island Administrator.

Fences may be constructed to exclude non-native animals from specific long-term vegetation monitoring plots and limited selective areas of the boundary where goats and sheep easily reenter the Park from nearby private livestock ranches. For example Herman Farm, L' Esperance, Catherineberg, Bordeaux Mountain, Hawksnest, Cinnamon, Ram Head and the Lameshur areas may be considered if wildlife trails are present (see page 20).

Non-governmental organizations (NGOs) with guidance and assistance from the NPS and USDA-APHIS will develop a comprehensive community outreach strategy. This outreach serves to inform, advise and educate the St. John community and island visitors about goats and sheep and the ecological damage a small group of goats and sheep can inflict on a small, remote subtropical island. VIDA and the University of the Virgin Islands Cooperative Extension Service will play a key role with the NPS to prepare and disseminate information in an ongoing basis. One focal point of this informational campaign will be the VIDA Animal Registration and Impoundment Program. The community will be advised of the global problems germane to introduced goats and sheep as well as the potential economic loss to the U. S. Virgin Islands if no action is taken to reduce their populations inside VINP.

The necessity of a long-term monitoring plan to humanely and periodically remove goats and sheep from the Park will be emphasized. The importance of preventing or minimizing new feral animal introductions, cessation of feeding activity for dry soils within the Park and other general conservation measures will be emphasized. Once the NPS/USDA team develops this program with key NGOs (such as Friends of VINP, St. John Community Foundation, and the Environmental Association of St. Thomas and St. John) it is envisioned these partnership will share in the ongoing development and determination of information.

Phase II – Collection Using Baits, Live -Traps and Contract Hunters (2 to 3 years)

Initial scoping and observation conducted in Phase I and before will allow Program Coordinators to determine where to concentrate their resources. Several primary control methods including use of baits, live-traps and contract hunters comprise initial reduction efforts. Secondary reduction methods may include radio-telemetry, tracking “baying” dogs, snares, and “Judas” goats to humanely collect additional goats in Phase II or III as they become trap-shy. Because goats are highly social animals, one equipped with a radio transmitter can lead field personnel to remote locations where other goats congregate. As goats become trap shy and less common, Program Coordinators (APHIS/NPS) may use bait stations to capture goats. A majority of collected animals will be donated through VIDA to ranchers, or processed for utilization (humane euthanization and subsequent butchering for personal consumption). In extremely remote areas some goats may be euthanized and treated with lime to facilitate decomposition, or (in exceptionally rare instances) buried at sea. Please see Final Disposition and Use of By-products on page 23 of the EA. Fence installation may be completed in areas designated for selective fencing while

minimizing damage to cultural sites and structures. Reasonable efforts will be made to utilize collected goats wherever possible and practical throughout VINP and the entire project area.

A relatively fast initial goat and sheep population reduction campaign is envisioned. Phase II will occur over approximately 2 to 3 years. Baiting in conjunction with single-capture and corral-style live-traps will be employed throughout selected areas of VINP. Biological and ecological data will be recorded from each collected animal. These data, field observation records and scat and track analysis will help determine relative abundance, to establish a baseline from which to estimate and measure group population dynamics. This phase works closely with VIDA to ensure wildlife ranchers who receive captured goats comply fully with the Livestock Registration and Impoundment Program. Other governmental and NGO partnerships/coalitions will be formally and informally renewed and strengthened. A comprehensive public information campaign will be developed and implemented with one recurring theme directed at preventing future non-native animal encroachments into VINP.

Phase III – Monitor and Removal of Remnant Goats and Sheep, Community Outreach and Education, Partnership Renewal, Fence Maintenance, and Record Keeping (Ongoing, Indefinitely)

This phase will be an indefinite period of scheduled and systematic monitoring throughout VINP for goat and sheep sign. Monitoring efforts for the presence or absence of goats and sheep is crucial to routinely locate and remove animals from the Park, and protect sensitive natural, cultural and wetland resources. Water sources, which are preferred habitat for goats and sheep, historical locations of high population densities, and NPS lands near private livestock ranches, serve as key monitoring areas.

Resource managers will be the lead personnel to accomplish the program objectives and provide continuity for implementing this plan. If goats, sheep or their foraging and trampling sign become evident in an area, authorized and certified NPS Law Enforcement or Resource Management personnel will trap or humanely collect the animals as described in Phase II. VIDA will be sought for their assistance. Long-term ecological monitoring to assess ecosystem change due to goat and sheep reduction will continue indefinitely.

NPS Law Enforcement and Interpretation Rangers, Maintenance and Resource Management personnel performing routine fieldwork will be provided with “Introduced Species Observation Sheets.” These personnel will be instructed on the species of particular concern and the importance of reporting any suspected sightings, sign or activity, and be routinely notified by Resource Management personnel to submit documented sightings as soon as possible.

Two possible fence uses are described in this alternative: (a) selectively fencing critical NPS boundary locations near existing livestock ranches; and (b) fencing some long-term vegetation monitoring plots. Areas with established non-native wildlife trails may be considered for either fencing option. VINP personnel will monitor the selective boundary fence and long-term vegetation exclosure fences approximately every 6 and 12 months, respectively. These workers will also monitor throughout the Park using transects for goat and sheep sign. Monitoring for encroachment will be intensive where goat and sheep concentrations were historically high, and in areas near private livestock ranches. Detailed records will be compiled from these monitoring efforts and maintained in an Excel non-native mammal database.

The partnerships and community outreach established before and during the NEPA process in Phase I will be supported, maintained and strengthened as key personnel change. Consistent, ongoing education and

cooperation will be central outreach themes, with emphases on the efforts to routinely provide this information to the resident and visiting public. Dissemination will occur through the development of printed and electronic media. In concert with VIDA, the Cooperative Extension Service of the University of the Virgin Islands, and other partners, the NPS will continually work with goat and sheep ranchers to maintain goats and sheep on private property; and emphasize the importance of the VIDA Animal Registration and Impoundment Program. Other governmental (e.g. DPNR) and NGO (e.g. Friends of VINP, the St. John Community Foundation, the Environmental Association of St. Thomas/St. John, *et al*), partners will be used to systematically disseminate the information previously developed to continually educate the public about non-native animals and their impacts to natural, cultural and wetland resources.

The MOU between VIDA and VINP will be revisited annually with periodic progress reports and scheduled meetings to refresh and strengthen the partnership. A new MOU will be implemented upon the expiration of the current document in 2008. Partners mentioned above may eventually be folded into the existing condition. This effort will combine human and equipment resources to enhance efficiency and strengthen the participants resolve to humanely and routinely remove animals, prevent re-introductions and protect Park resources. This campaign dovetails well with similar partnerships and information regarding sustained reductions of rats, cats, mongooses and hogs from within NPS lands. In all cases, efforts in Phase III will increasingly focus on efforts to restrict new animals from entering the Park.

The timeframe for implementing each phase of the sustained reduction program will be: Phase I and Phase II concurrent for the next one to four years beginning in June 2004; and Phase III will monitor throughout VINP and accomplish partnership and educational goals. The educational component and continued partnerships are essential and must be renewed, strengthened and sustained indefinitely. The ultimate goal of Phase III is to prevent or reduce non-native wildlife encroachment

ENVIRONMENTAL CONSEQUENCES

The potential consequences of implementing “Alternative 2, Reduce Goats and Sheep within VINP and Sustain a Near-zero Population,” are analyzed in the EA; key impacts are summarized below:

Effects to Threatened and Endangered Species

The NPS is required to identify and promote the conservation of all federally listed threatened, endangered, or candidate species within Park boundaries and their critical habitats. The NPS is also required to protect all state and locally listed threatened, endangered, rare, declining, sensitive, or candidate species, provided they are native to and present in the parks, and their critical habitats (NPS Management Policies 2001).

The sustained reduction program will greatly decrease population levels of two non-native animals, goats and sheep, which consume numerous plant species living on St. John. The listed species include the Endangered St. Thomas Lidflower Prickly Ash and Marron Bacora, which has been proposed for listing. Goats and sheep will also no longer be affecting twenty-five territorially threatened and endangered listed plant species with extinction within the Park.

The proposed restoration programs will not adversely impact any federally listed threatened or endangered species or territorially listed endangered or rare species (U.S. Fish and Wildlife Service Consultation Letter of July 15, 2002)

Effects to Wildlife

Wildlife will be positively benefited by this program because great numbers of native fauna including several native bird, reptile and amphibian species and numerous insect and spider species will benefit from the reduction of goats and sheep populations. The substantial cessation of goat and sheep grazing and trampling in specific locales, will improve habitat for lizards, snakes, salamanders and insects dependent upon the consumption of leaves, fruits and berries for their survival; their enhancement should provide additional food for several native bat species. Goat and sheep removal from riparian areas will improve riparian habitat for frogs and aquatic invertebrate species dependent upon the consumption of plants for their survival. Goat and sheep reduction will allow years of higher production of fruits and berries and will improve habitat for those species which depend upon these crops, such as many bird species (pigeons and doves) and bats. Of particular concern are the varied native reptile and amphibian populations in the Park and their associated links in the food and ecological web of the island.

Effects to Wetlands, Saltponds and Floodplains

Wetlands, saltponds and floodplains will positively benefit from implementation of this program because goat and sheep impacts will decline throughout the Park. Adverse impacts to wetlands will substantially decrease under this alternative as the native flora and fauna will change under natural conditions.

The decline in the quality of the Park's wetland and floodplain communities will be a reduced concern. High sedimentation rates with low watershed soil stability due to goat and sheep trampling and grazing impacts will decrease as the numbers of goats and sheep decrease. Goats and sheep will no longer be substantially foraging red, black and white mangrove seeds, propagules and seedlings, protected species in the Virgin Islands. A decrease in goat and sheep grazing and trampling will reduce rates of erosion and sediment deposition in wetland communities in Cruz Bay, Mary's Creek, Haulover Bay, Newfound Bay, Hurricane Hole, Coral Harbor, Fish Bay and Hassel Island. Of particular concern are the varied native reptile and amphibian populations in the Park and their associated links in the food and ecological web of the island.

Effects to Soils

Within three years of implementation of this alternative, soils in the park will be positively benefited by the reduction of disturbing activities from goats and sheep. Substantial reductions will eventually allow disturbed areas to heal over with vegetation. No new goat and sheep trampling and vegetation grazing areas will be established.

Eventually, erosion from already disturbed sites will decline as the sites establish vegetation cover. As vegetation cover increases, overall watershed conditions will continue to improve. As watershed conditions improve, runoff within the watershed will be more readily intercepted by vegetation and be absorbed on site. This will cause less intense runoff events and decrease the rate of gully erosion (aggradation and widening). Less intense runoff events will cause less sediment delivery into local waterways and near shore ocean waters where it can affect coral reef, mangrove, seagrass bed ecosystems and adjacent fisheries, nurseries and associated marine communities.

The use of existing trails could also lead to a short-term increase in soil erosion. The increase in soil erosion and the impacts to the soil micro-flora will likely decline once the goats and sheep are reduced

from the Park and use of the hunting trails is discontinued. These trails will be ephemeral and not heavily used. Traps will be placed in previously disturbed areas to reduce any potential impacts to soils.

Trampling of the soil by vehicles and the hunters could cause alterations in the soil micro-flora and cryptobiotic soil crusts may be damaged. Cryptobiotic soils are important components of soils in arid and semi-arid environments and trampling, especially during the dry season, easily damages these soil crusts. These soil crusts have the ability to re-colonize disturbed areas from nearby non-disturbed land; however re-colonization and re-establishment of soil crusts in an area can be somewhat slow depending on various environmental factors.

Effects of Chemical Immobilization Drugs

A comprehensive long-term control approach must involve flexibility, therefore use of the “Judas” goat technique may be necessary, and however, the Park only intends limited use of this option. The chance of using this secondary control technique remains small and would be only considered for goat control.

As described in the Goats and Sheep Implementation Plan in Chapter II, the use of chemical immobilization drugs is not expected to produce any primary or secondary toxicity impacts to non-target wildlife. Because goats are highly social animals, an animal equipped with a radio transmitter can lead field personnel to remote locations where goats congregate (Taylor and Katahira 1988; White and Garrett 1990). This method of locating animal concentrations in steep slopes and dense underbrush can be an effective means to collect exotic goats. Goats used in this fashion are called Judas goats. Before fitting an adult goat with a radio transmitter, the animal must first be captured and restrained through injection of chemical sedatives. The fastest, safest and most humane method to restrain goats for attaching a radio collar is through chemical restraint. Standard large-animal restraint drugs will be used to temporarily sedate trapped goats. USDA-APHIS personnel have extensive training in the preparation and use of chemical restraint and immobilization drugs for large (and small) animals throughout North America (Kreeger 1997). Their experience includes many successful goat and sheep reduction or eradication programs.

Telazol is a combination of tiletamine and zolazepam and will be used in conjunction with Rompun to reduce nausea (Kreeger 1997). Goats are particularly susceptible to overheating and will be kept in the shade with provisions for wetting them down as necessary (IWVS 1991) Intramuscular Telazol injections will be administered by either a jab stick, blow gun or CO2 pistol to captive individuals in corral or box traps. Fewer than five goats will be collared in each watershed. Immobilization drugs and drug delivery equipment will be restricted to employees responsible for goat management under the direct field supervision of the Program Coordinators. These employees must have completed a Wildlife Immobilization Practitioner Course as required by NPS-77-4. Immobilization drugs will be stored in a locked safe and records will be maintained to include the date, amount used, purpose, and authorized signature of the user. Telazol and Rompun are listed as a Class II substances, therefore, all use and storage guidelines specified by the Drug Enforcement Administration will be followed (Fowler 1978). Radio-collared animals will be monitored at least twice a year to detect and remove ingress animals into the control units (Hegdal and Colvin, 1986; Kreeger 1997). Judas goats will be humanely collected for removal of radio transmitters following a maximum three-year period.

Effects to Vegetation

Impacts to native flora will be greatly reduced because fewer goats and sheep will consume less native vegetation. Goats and sheep are voracious browsers of vegetation and prefer native plants because these plants evolved in isolation from large herbivores and lack defenses against these ungulates. Fewer seeds from exotic plant species will be dispersed in goats and sheep fecal matter. Alternative 2 will initially involve Wildlife Control Agents in an intensive reduction effort. This reduction effort will be expected to last two to three years. Negative effects to native vegetation and individual plants by wildlife control agents will be short-term, insubstantial, and ephemeral, if any. Short-term impacts to native vegetation will occur as goats and sheep are chased and cornered. These impacts will include trampling of the vegetation, damage to individual plants as leaves, branches and running animals and hunters tears shoots.

Twenty-six long-term ecological monitoring sites (Weaver 1999) could potentially be permanently fenced to exclude goat and sheep populations. Valuable long-term ecological data will be preserved. Additionally, even with the current road and trail systems, the teams might create trails as they move between different areas in the Park. These trails will be ephemeral and not heavily used. These temporary trails are consistent with park use and management guidance. Impacts associated with the installation of these trails are minimal compared with goat and sheep impacts to scenic values, cultural resources, public safety, soils, threatened and endangered species, vegetation, wildlife, water quality and wetlands. Trails and fencing will avoid any vegetation over one inch DBH and will consist of underbrush thinning sufficient to permit passage of humans or installation of fences. Vegetation will be allowed to regrow after fence installation to mitigate potential visual impacts.

Goat and sheep impacts to the native island vegetation, including endemic and Federally and Territorially listed plant species, will be substantially reduced in Cinnamon, Reef, Leinster, Brown, Francis, Maho, Lameshur bays, and Lind Point area, and Hassel Island. Plant communities will readily benefit by seedling survival, increase of cover, frequency, biomass of native plant species, increased topsoil and water absorption.

Effects to Cultural Resources

Goats and sheep will no longer seriously damage irreplaceable archeological and historical sites, and degrade the scientific importance of the St. John archeological record. Implementation of this alternative will result in rapid reduction of goats and sheep and, therefore, reduce continued damage to cultural resources through goat and sheep depredations on archeological and historical sites at Cinnamon, Reef, Leinster, Brown, Francis, Maho, Lameshur bays, Lind Point and Hassel Island. Goat and sheep grazing through disturbance has already adversely affected the integrity of many National Register-listed archeological sites within VINP.

Impacts to the Park's cultural resources by fencing and direct reduction operations are anticipated to be insignificant. The primary reduction movement made is foot traffic, and some may be near archeological sites. These areas are currently open to the public and risk continued destruction by goats and sheep unless this alternative is taken. Impacts of this type could be minimized by orienting the reduction groups to the sensitivity of these sites to damage, and requesting they avoid foot traffic over historic structures whenever possible. Campsites, fences and installation sites will be assessed in advance using shovel-testing for cultural resources concerns. Fence posts will require test holes to ensure protection of archeological resources

The NPS provided information to the USVI's State Historic Preservation Officer (SHPO), with the determination that the NPS Preferred Alternative will not cause adverse effects to archaeological and cultural resources including submerged resources or historic structures. Since no objection was received from the SHPO, pursuant to 36 CFR 800 of the National Historic Preservation Act, Section 106 compliance has been completed.

Effects to Socio-economic

The proposed action to conduct Park-wide reduction of non-native goats and sheep will have some short-term negative impacts on socioeconomic issues but will also have long-term positive impacts on the quality of the visitor experience. The long-term positive effects greatly outweigh the short-term effects. Goat and sheep ranchers will discontinue their use of Park lands for livestock grazing, and the associated negative affects of the practice. The ranchers will be able to maintain their entire herds, for the production of milk, meat and wool, on their private livestock ranches. Visitor use will be restricted on those specific NPS lands when major collection operations occur. Fences will be located to avoid crossing roads. Gates, which may potentially affect resident or visitor movements, will not be installed.

Park-wide reduction will be an intense effort over a short period of 3 to 4 years. Depending on the planned operation in the initial three years of intensive reduction effort, relatively small portions of VINP could be closed for brief (for example, two consecutive days) periods of time. Visitor use will possibly be slightly restricted on various portions of Federal lands during goats and sheep reduction operations.

Over the last ten years, the annual visitation to St. John Island has averaged approximately one million visitors per year. However, some visitors will possibly be denied access to various public trails due to the presence of aggressive goats and sheep. Goat and sheep reduction personnel will contribute financially to the local economy through purchases of goods and services, vehicle rental and equipment purchases.

Effects to Visitor Experience

The NPS will receive fewer complaints from visitors about goats and sheep and their impacts to the Park. Scenic values will increase under this alternative because goats and sheep will no longer be eating, trampling, crushing and uprooting native flora the public hopes to observe and expects to have preserved. The aesthetics of the Park will be greatly increased due to the increase of native wildlife, increase of native plant cover, and increase protection of archeological and historic sites. The natural and cultural values of the Park will greatly increase. Therefore, the reduction of goat and sheep depredations on Park sites will also reduce damage to natural, cultural, marine and terrestrial resources throughout the Park.

Goats and sheep will be less dangerous to people in certain situations. Goats and sheep will be less likely to cause resident, visitor or employee traffic accidents or congestion while driving Park roads. Park trails will also be safer due to lack of goat and sheep erosional damage to the tread surface caused by goat and sheep grazing and trampling in the areas immediately uphill of the trail corridor. Road closures will be less likely following traffic accidents between goats and vehicles or motorists driving off the road to avoid collisions with goats or sheep. The tourist experience at VINP will be substantially improved.

Health and sanitation impacts will necessarily improve under this action and sheep and primarily goats will be less likely to serve as co-hosts with native wildlife and livestock for infectious and parasitic

diseases. Fecal pellets on and near NPS picnic tables will dramatically decrease, enhancing public sanitation, disease transmission, and aesthetics.

Effects to Park Operations

The non-native wildlife control program administrative costs will increase with the implementation of the initial contract to remove exotic wildlife (\$60,000 with the USDA's Animal Plant Health Inspection Service / Wildlife Services Division). Implementation of this alternative will have a low potential for adverse operational effects because goat and sheep populations will be greatly reduced, and held to low levels, throughout the Park at all visitor use, administrative, cultural and natural resource sites.

This program will necessitate a slight increase in on-Park personnel, jeep or truck style vehicles and all-terrain vehicles. Other methods of transportation may also be used, such as horses. Housing will utilize existing structures whenever possible, including government approved facilities on NPS owned property. Temporary tent camps may also need to be established to ensure efficient and productive operations in remote areas, such as boat-only accessible anchorages and rough, roadless terrain. These camps will be located in areas already affected by vegetation clearing associated with construction of historic buildings sites located in the Park's backcountry. Two to three miles of fences may be constructed to prevent goat and sheep access through key portions of the Park boundary.

WHY THE PREFERRED ALTERNATIVE WILL NOT HAVE A SIGNIFICANT EFFECT ON THE HUMAN ENVIRONMENT

As defined in 40 CFR §1508.27, significance is determined by examining the following criteria:

Impacts that may be both beneficial and adverse

There will be no adverse impacts for visitor safety, as wildlife reduction personnel would operate in remote field locations most of the time, which are not frequented by the vast majority of VINP visitors. Positive impacts include reduction of impacts to native vegetation communities and the diverse wildlife living within the forests, enhanced wetland areas, and retention of soil stability resulting in less sedimentation and nutrients into adjacent coral reefs. Historical buildings would not be destabilized by goat herds, enhancing public safety and sanitation. Finally, park aesthetics and visitor experience would be greatly enhanced overall as the cumulative result of this alternative.

Degree of effect on public health or safety

Use of firearms presents the greatest potential danger to public safety. Live capture methods would prevail over shooting methods, however, some animals must be shot while inside the trap. The chance of incidental bullet strikes is basically nonexistent in this situation. A small number of animals may require shooting while not inside a trap. In this case wildlife reduction personnel would exercise extreme caution while ensuring a line-of-site with a physical embankment (such as a steep hillside), beyond the target animal. Most envisioned scenarios would be small-scale events in extremely remote locations. If large-scale efforts were planned, then close cooperation with NPS and Territorial Law Enforcement personnel would occur.

Unique characteristics of the geographic area such as proximity to historic or cultural resources, park lands, prime farmlands, wetlands, wild and scenic rivers, or ecologically critical areas

While goats and sheep occur within close proximity to historic structures and sensitive wetland (saltpond) areas, reduction efforts will not generally be conducted in the immediate vicinity of these resources.

Degree to which effects on the quality of the human environment are likely to be highly controversial

Initially wildlife reduction coordinators would work closely with the Territorial Government through the MOU to humanely remove animals from the park. From public meetings that were conducted, the park learned that local wildlife ranchers do not intentionally keep their goats and sheep on NPS lands. The prevailing attitude is entirely supportive of this program; therefore, no controversy is anticipated upon its implementation. Community support is overwhelmingly supportive of this wildlife reduction action, associated methodology and final disposition of collected animals.

Degree to which the possible effects on the quality of the human environment are highly uncertain or involve unique or unknown risks

Because VINP has undertaken wildlife reduction projects with rats, cats, mongooses and hogs, the park has an accurate basis for predicting possible effects on the quality of the human environment. Therefore predictions are made with a high degree of certainty the effects of this action would be entirely favorable to island residents and visitors. The extremely low risk level anticipated from the use of some wildlife control methods being considered can be essentially eliminated as a result of proper planning, communication and implementation.

Degree to which the action may establish a precedent for future actions with significant effects or represents a decision in principle about a future consideration

This action is entirely consistent with existing Federal and territorial laws and regulations and represents a continuation and strengthening resolve to humanely remove introduced mammals from VINP. This action affirms the park's status as an International Biosphere Reserve to administer established principles of conservation biology. This project continues the effort to protect native flora, fauna, wetland and adjacent marine resources for the enjoyment of future generations.

Whether the action is related to other actions with individually insignificant but cumulatively significant impacts

None of the anticipated impacts from this or related actions can be considered as individually insignificant but cumulatively significant. Neither individual nor cumulative impacts are significantly negative for residents, visitors or resources.

Degree to which the action may adversely affect districts, sites, highways, structures, or objects listed on National Register of Historic Places or may cause loss or destruction of significant scientific, cultural, or historical resources.

The impacts from the proposed action would not adversely affect districts, highways, structures or objects listed on the National Register of Historic Places, or cause loss or destruction of significant scientific, cultural, or historical resources. However, each of these items would continue to be adversely affected, to an increasingly greater degree, unless this action is taken.

Degree to which the action may adversely affect an endangered or threatened species or its critical habitat

The anticipated impacts would not adversely affect an endangered or threatened species or its critical habitat. The action is anticipated to reduce grazing threats to two endangered plant species.

Whether the action threatens a violation of Federal, state, or local environmental protection law

This action violates no Federal, state or local environmental protection laws.

NON-IMPAIRMENT OF PARK RESOURCES

After a critical review of the environmental impacts documented in the EA, the NPS Preferred and the Environmentally Preferable Alternative has been selected for implementation. This alternative, together with the recommended mitigation measures will not impair Park resources or values, including the current opportunities for the enjoyment of these resources or values. Implementing the Selected Alternative will not violate the NPS Organic Act.

FINDING OF NO SIGNIFICANT IMPACT

Based upon the EA, the consequences of the Environmentally Preferable Alternative summarized above, and comments from agencies and the public, I have determined Alternative 2 will not have significant effects on the quality of the human environment. Therefore, in accordance with the National Environmental Policy Act of 1969 and regulations of the Council on Environmental Quality (40 CFR 1508.9), an environmental impact statement will not be prepared.

Factors considered in making this finding include:

- The impacts resulting from the sustained reduction program will not impair any Park resources or value necessary to fulfill specific purposes identified in the park's enabling legislation. The program will not violate the NPS Organic Act.
- No threatened or endangered species or critical habitats are likely to be adversely affected. (July 15, 2002 letter from U.S. Fish and Wildlife).
- The NPS provided information to the Territorial Government, State Historic Preservation Officer (SHPO), with the determination the NPS Preferred Alternative will not cause adverse effects to archaeological and cultural resources, including submerged resources or historic structures. Since no objection was received from the SHPO, pursuant to 36 CFR 800 of the National Historic Preservation Act, Section 106 compliance has been completed.
- The activities to be implemented by the Plan are consistent with the Coastal Zone Management Act and with the Coastal Zone Management Plan. The NPS provided information to the Territorial Government Department of Planning and Natural Resources with the determination the NPS Preferred Alternative is consistent with the Coastal Zone Management Act, under the Territorial Government of the USVI.
- The activities authorized by the Plan are consistent with NPS Management Policies and Natural Resources Management Guidelines, the General Management Plan (NPS 1983) and Resources Management Plan (NPS 1999) for the Virgin Islands National Park, applicable Federal and Territorial laws and regulations, and complies with Executive Orders 11988 and 11990.

- The authorized activities for reducing non-native wildlife populations will not have a significant impact on public health and safety or on consumers, minority groups, American Indians, women, or the civil rights of any person.
- This program is not a unique activity and the effects on the quality of the human environment are not likely to be highly controversial, nor are they highly uncertain or involve unique or unknown risks.

Recommended: **Art Frederick** **7/13/04**
Superintendent, Virgin Islands National Park Date

Approved: **Patricia A. Hooks** **7/29/04**
Regional Director Date

ERRATA SHEET
SUSTAINED REDUCTION PLAN FOR NON-NATIVE GOATS AND SHEEP
WITHIN VIRGIN ISLANDS NATIONAL PARK
Virgin Islands National Park

COMMENTS AND RESPONSES

Two written comments were submitted during the 60-day public comment period on the Draft EA for a Sustained Reduction Plan for Non-native Goats and Sheep within Virgin Islands National Park. Issues raised include: general comments of support; use of fertility control methods; boundary fence installation and maintenance by private livestock owners; the mosaic of Park and private lands; use of dogs to locate animals; use of live traps preferentially over kill traps; use of leg snares to trap animals; how collected animals will actually be euthanized, use of volunteers to prevent new wildlife introductions, a suggested alternative, to remove goats to a United States wildlife sanctuary. The single modification to the Final EA was in our clarification of snare usage, and the scope remains unchanged. Otherwise slight changes either clarified the text or were grammatical. The responses below were largely copied from the Draft EA text and were strengthened for clarification.

1. General Comments of Support from The Humane Society of the United States

Comment: Ecosystems are not static, unchanging systems; they are constantly in a state of flux. Species introductions and range expansions can be a natural phenomenon and can occur with and without human intervention. With this in mind, we suggest that, before any attempt to eradicate or control a non-native species is undertaken, scientific evidence must clearly indicate that the non-native species in question is actually damaging native species and ecosystems and that removal of the non-native species will actually benefit native ecosystems. Not all non-native species are actually “invasive” in the sense of causing harm to the long-term viability of native populations. The benefit to native species of non-native species removal is often taken as a given, but such a benefit may not occur, especially in systems in which the non-native species has become firmly established, where native ecosystems have already been irreversibly impacted, and where removal efforts may essentially cause more harm than good.

In addition, the humaneness of potential control methods—both for target and non-target species—must be taken into account. Scientific research can be used to determine whether reproductive control or other non-lethal methods can be substituted for lethal control and to assess which lethal control methods will minimize pain and distress. Humaneness of control efforts will also be impacted by the duration over which control is carried out; if it is not possible to completely remove all non-native animals from an area, plans for eradication often become ongoing lethal control activities with no end in sight.

With that said, we understand the impact that introduced species can have on native species and that the impact to threatened or endangered species endemic to an island may be substantial. Island systems may represent the best, or perhaps only, systems in which attempted removal of non-native species may be both justified and feasible. We are concerned that in Virgin Islands National Park (VINP), the presence of numerous private inholdings within the Park, as well as more private property immediately adjacent to the Park, will present special problems to the Proposed Alternative of the EA that could impact the welfare of the target sheep and goats, as well as non-target animals, in part due to the likely duration of lethal control activities. We address this and other concerns briefly below.

Response: The NPS has not modified the Goats and Sheep Implementation Plan in Chapter II of the Final EA to address these concerns by The Humane Society of the United States.

2. Potential Use of Fertility Control Methods

Comment: We note that the EA analyzes only two alternatives, a No Action Alternative and the Proposed Alternative, whereas the National Environmental Policy Act requires consideration of a reasonable range of alternatives. We encourage the National Park Service (NPS) to provide more information in the Final EA regarding the potential use of fertility control methods with goats and sheep within VINP. In particular, the Final EA should provide more information regarding the likely ecological impacts of sheep and goats over time if populations of these animals were reduced slowly via fertility control, rather than more rapidly by lethal control. We understand that a contraception project was at least initiated to address the feral donkey population in VINP;¹ the NPS should indicate why similar projects are not being considered for sheep and goats within VINP. Fertility control is considered by some to be more humane than some of the control strategies included in the Draft EA, such as snares and shooting. If this method could check sheep and/or goat populations sufficiently to protect native ecosystems from further significant damage, then it may be an appropriate management tool in this situation. If fertility control is a feasible alternative to lethal control for goats, or at least for the far less numerous sheep, then we encourage the NPS to give full consideration in the Final EA to an alternative that will incorporate fertility control of one or both species as a management strategy.

Response: Page 29 of the EA discusses Use of Contraceptives or Sterilization, an Alternative Considered but Eliminated from Detailed Analysis. Contraception or sterilization could be a relatively benign way to prevent the birth of new goats and sheep in an area; however, the original animals will remain in the area unless they are humanely removed.

A research project was initiated in 1991 solely to test the efficacy of Porcine Zona Pellucida (PZP) on non-native donkeys. PZP is not recommended as a population control method but is suitable for preventing pregnancy and subsequently limiting birth rates in the short run. Because immuno – contraceptives were developed in the temperate region where ungulates breed seasonally, their effectiveness is amplified. Subtropical populations breed aseasonally making contraceptives less reliable. Because males remain fertile, almost 90 percent of the females require sustained contraception to reduce the birth rate.

Unfortunately, birth control technology is presently inadequate to achieve a substantial, immediate and cost-effective reduction of goat and sheep populations throughout the Park. This is especially true when goat and sheep herds are thriving throughout the Park, which is entirely covered with vegetation and has a year-round growing season. Contraceptives are expensive and require annual reapplication for each treated individual, thus necessitating the ability to humanely and semi-permanently mark and re-identify individual females. Contraception is impractical, expensive and ineffective for our mandates to humanely reduce goat and sheep populations throughout NPS lands to near-zero limits. For these reasons use of contraceptives or sterilization were considered alternatives but were rejected from detailed analysis during the planning process.

3. Boundary Fence Installation and Maintenance by Private Livestock Owners

Comment: We appreciate the attention in the EA to the need for fencing and for education of private livestock owners to address the repeated ingress of sheep, goats, hogs, and other non-native feral animals into VINP. In particular, we support the provision allowing sheep and goat owners 60 days to remove their own animals from within the Park before the actions outlined in the Proposed Alternative are begun. Based on a phone conversation with R. Boulon (2/12/04), it is our understanding that any ear-tagged sheep and goats captured after the 60 days and at any time during the implementation of the Proposed Alternative will also be returned to their owners. We agree with this reasonable provision. Although we are not familiar with the Animal Registration and Impoundment Program, some way to ensure that all privately owned sheep and goats are ear-tagged or otherwise uniquely marked at or soon after birth will be necessary to ensure that goats and sheep entering the Park in the future can be returned to their owners, who can then be held accountable for the escape or release of their animals.

We support the use of fencing to protect vegetation monitoring plots and along selected stretches of the VINP boundary. We also support an aggressive outreach and education campaign to reduce further sheep and goat introductions to the Park, as well as any efforts to assist private landowners with fence installation and repair to prevent further ingress of privately owned sheep and goats onto Park lands.

Addressing the source of sheep and goat introductions via education, outreach, and exclusion or barrier fencing will be absolutely crucial considering the repeated releases, escapes, and abandoning of domestic sheep and goats from private lands in and near the Park. If Volunteers-In-Parks will be asked to assist in the removal of sheep and goats, these volunteers could also be asked to assist with the installation and maintenance of fencing to help prevent further introductions of sheep and goats (reducing the need for future removals) and to help protect vegetation monitoring plots or any especially sensitive areas within the Park. We suggest that the Final EA incorporate the use of local volunteers to help *prevent* further introductions of sheep and goats (by assisting with fencing) rather than simply to help remove the sheep and goats that have already made their way into the Park.

Response. Ungulate-proof fences will be considered for installation to permanently restrict their access to park land immediately adjacent to Herman Farm, L' Esperance and Catherineberg, and within portions of Brown, Reef, Lameshur, Cinnamon, Hawksnest and Francis bays, the NPS Range, Ram Head and Hassel Island. These locations have been historically breached by goats or sheep, and allow easy entry into VINP. Where necessary, restricted-access, ungulate-proof gates will be installed and maintained; these gates will not change human access to park lands. During fence installation the opportunity will be used to collect subsurface archeological information on a systematic basis by mapping and shovel-testing the post holes as they are dug. NPS may provide funds to assist ranchers with fence installation or repair fences on their wildlife ranches to reduce non-native animal encroachment into adjacent or nearby NPS lands.

Chapter II includes: "Fence installation will follow consultation with ranchers, and VIDA. Their assistance and cooperation will be solicited and encouraged throughout the ongoing goat and sheep reduction program. Enhanced community outreach through numerous governmental and non-governmental organizations will continue to be an essential and ongoing component, as well."

The siting, clearance, installation and maintenance of ungulate-proof fences in the subtropics are a serious, expensive, and arguably ineffective method. Pages 27 to 29 of the EA thoroughly discuss the use of fences and much is applicable to fencing research plots and portions of the boundary. Of paramount importance is establishing and maintaining a partnership between St John wildlife ranchers and the groups

which are working together to humanely remove goats and sheep from park lands. This ongoing partnership would ensure ranchers understand the impacts their livestock make to the park, and allow assistance from resource managers. In this effort NPS can possibly provide funding to ensure the private ranch fences are adequate. Only wildlife ranches fully compliant with the VIDA Animal Registration and Impoundment Program will qualify to receive goats and sheep captured from within VINP.

The NPS is reluctant to establish large-scale fencing within the Park because they are extremely expensive to install and maintain and become ineffective over time. Selective boundary and research plot fencing were noted as an option for future consideration. If and when any additional fencing is conducted, every effort will be made to solicit for VIP's to both install and maintain them for the purpose of preventing future goat and sheep encroachments.

The Volunteers-In Parks (VIP) program will possibly be used to involve a limited number of residents to share their knowledge and hunting skills and labor to assist with specific goat and sheep collection activities. Local knowledge will be gathered from island residents regarding trap design, manufacture and placement, seasonality, timing and bait choice. This program responds to a cultural tradition and includes a long history of goats and sheep on the island, and archaeological information regarding enslaved African Americans, and others, supplementing their diets (at least in some areas of the Americas) through hunting, fishing, and trapping (Olwig 1985). NPS volunteers (Volunteer-in Parks) will be solicited to assist with both the installation and maintenance of NPS boundary and research exclosure fences to help prevent further introductions of goats and sheep.

VIP's authorized by VINP will participate under the exclusive direction and authority of the Park Superintendent (or his designee); such VIP's will be prohibited from using firearms and must participate within the strict guidelines established by the NPS and USDA Program Coordinators.

4. The Mosaic of Park and Private Lands

Comment: The mosaic of Park and private lands will make it difficult to completely prevent further introductions of sheep and goats and will make it difficult, if not impossible, to remove all sheep and goats from VINP. Thus, if the NPS moves forward with the Proposed Alternative, some level of lethal control of sheep and goats is likely to continue for several years. Due to the likelihood of long-term sheep and goat control within VINP, full consideration of the humaneness of control methods—and the potential to substitute fertility control for lethal control—is especially important.

Response: Approximately 52.0% of the island is Federal land. The Park owns 2,816 hectares (7,444 acres) of the 3840 hectares (9,485 acres) authorized by the enabling legislation. Within the Park boundary, 26.5% (901 hectares or 2,226 acres) of the land is owned by either private interests or the Virgin Islands government. These separate parcels of non-federal land or "inholdings" are dispersed throughout the federal land within the authorized boundaries. The trend has been to further sub-divide the parcels and develop them. There were 261 parcels of non-federal land in 1991 and approximately 322 in 1992.

The NPS is unable to restrict development on private adjacent lands, as our Enabling legislation lacks eminent domain authority. Local zoning or Coastal Zone Management Act (CZM) protection is often inadequate due to relaxed or inconsistent enforcement. Virgin Islands National Park participates in CZM on any permit review for construction or modification of land within or adjacent to Park boundaries and offers comments. The Resource Management Division has established mechanisms for the Park to be

contacted on adjacent development issues and to participate in the review/permitting process. There is also a need to upgrade the Park's land status maps (1986) to show changes in ownership and anticipate potential development. Due to lack of eminent domain authority, the Park has to compete for NPS acquisition funds and must work closely with groups like the Friends of Virgin Islands National Park and Trust for Public Lands. These non-profit NGO's can either purchase or hold land until Park funds are available or purchase and donate land to the Park.

Because eradication is unfeasible, our goal is to humanely reduce goat and sheep populations and keep them low. A vast majority of animals are expected to be relocated to wildlife ranches. At those locations the goats and sheep will generally be utilized for consumption; the primary reason livestock producers keep goats and sheep. Some goats and sheep might be killed instead of expensively captured and harvested later on a wildlife ranch. Additionally, to live-capture and transport goats and sheep over a few miles of rough trails, then by boat or trailer into a wildlife ranch, NPS would consider inhumane.

Development of private inholdings within and adjacent to the Park boundary, and pressure to re-open or pave old Danish cart roads within the Park, represents serious threats to marine and terrestrial ecosystems in the Park. Clearing of St. John's steep hillsides on slopes, 80 percent of which exceeds 30 degrees, has resulted in threats to native species, spread of exotic plants, increased soil erosion, loss of sparse topsoil, and fragmentation of the forest and "viewsheds". These impacts need to be minimized or at least mitigated. Because development cannot be prevented, eco-sensitive development must be encouraged to require use of recycled and low energy products as well as forested scenic easements. Agreements with landowners could be developed to achieve energy savings, and to minimize loss of biological diversity, introduction and spread of exotic species, degradation of Park resources and scenic values.

We considered all pertinent factors including economic, logistic, financial, and health and safety of livestock, wildlife workers, island residents and visitors. The approach to use fertility control methodology was considered, analyzed and rejected as a viable option and was fully addressed in a previous response. Additionally, to fence (and gate) the entire park and remove goats and sheep by zone-fenced hunting was also considered and rejected as unfeasible, unrealistic and impractical. One must remain cognizant to consider some lethal methodology, to control animals raised almost exclusively for slaughter and consumption, and animal husbandry practice. To deny this established and widely accepted practice is perhaps disingenuous.

5. Use of Dogs to Locate Animals

Comment: We always have concerns over the use of dogs in tracking or removing wildlife or feral domestic animals due to the potential for injury to the dogs and to the targeted animals. Therefore, we appreciate the assurance in the EA that only baying dogs—not catch dogs—will be used, that dogs will be under control at all times, and that dogs will not be allowed to contact sheep or goats (EA, p. 23). However, the potential will always exist for dogs to inadvertently come into contact with sheep, goats, or other animals that may be encountered in the field. We also appreciate the assurance that dogs will only be used when other methods have been attempted and have failed to remove the last sheep or goat in an area.

Response: Use of well-trained and experienced tracking dogs can be extremely cost effective when seeking to remove a small number of remaining, trap-shy individuals. Use of dogs will be considered for humanely collecting individuals where other alternatives have failed. The removal of every possible goat and sheep from remote densely vegetated locations will possibly require the use of trained tracking dogs.

These specialized animals will be brought in from the U.S. mainland and maintained under strict control at all times. Dogs will be under the control and guidance of USDA Program Coordinators and visitor safety will be foremost in all wildlife operations.

Chapter II includes: “Every successful NPS goat and sheep reduction program on an island or on a mainland environment has relied upon the use of tracking dogs to locate the last remaining goats and sheep. Tracking dogs are being used at Hawaii Volcanoes and Channel Islands National Parks to locate goats in steep terrain, and in dense brush and forest. Only if a decision or the opportunity to capture the “last goat” is made will VIIS use tracking (“baying”) dogs, and only under the guidelines stated above. They will only be used to locate goats and not contact the goats. As they will be under strict control at all times, they will produce no impacts to ground-nesting birds. Dogs, prior to being allowed in the Park, will be vaccinated for all common canine diseases. The USDA will be required to submit inoculation documentation. The safety and well-being of the dogs and wildlife reduction personnel will also be of importance.”

6. Use of Live Traps Preferentially over Kill Traps

Comment: We appreciate the assurance in the EA that live-traps will be used preferentially over kill traps (EA, p. 21) and that neck snares “will only be considered for deployment under rare circumstances and in remote locations (EA, p. 22).” However, the definition of “live trap” and “kill trap” is unclear in the EA. We assume that, by “kill traps” the NPS is referring specifically to neck snares, whereas by “live traps” the NPS is referring to single box and multiple corral-style live traps and leg snares (EA, pp. 21 – 22 and elsewhere). Statements on p. 24 suggest that the NPS considers neck snares to be live traps, though it is not clear in that instance what is meant by “kill traps.” If the NPS is considering the use of some other type of kill trap (other than the neck snare), this must be clarified in the Final EA. Regardless, we object to any use of neck snares in this project, whether they are supposed to function as live traps or as kill traps. We acknowledge that the neck snare *may* simply hold an animal, or *may* result in a relatively rapid death, but we are not convinced that either of these outcomes will be more likely than the slow, potentially painful death that has been documented for some species, such as foxes and coyotes. The EA indicates (without reference to any published work) that most animals found in neck snares are found alive, but also suggests (again with no support) that deer caught in neck snares tend to struggle to such an extent that they die a rapid death by strangulation (EA, p. 22). These two statements appear contradictory. In addition, we are not certain what duration of time the NPS considers “rapid.” If the NPS insists on the use of neck snares, despite the potential for these traps to cause unnecessary pain and distress, the Final EA must provide more information, based on peer-reviewed research, regarding the use of neck snares with ungulates. Specifically, the Final EA should indicate the likelihood that the neck snare design to be used by the Park—whether a “regular” wire snare, power snare, snare with “stops,” or snare without stops—will function as a kill trap (including the average duration of time to loss of consciousness of snared ungulates), as well as the likelihood that the neck snare will hold goats and sheep without killing them or causing injury. This additional information will allow the public to make a more informed decision regarding the need for the use of this type of trap.

Response: Use of snares for lethal capture may be necessary in extremely remote areas at some future time. Use of hold snares such as plastic or rubber-coated snares with stops are considered more inhumane than standard neck snares. Wildlife in hold traps often suffocate over a period of hours rather than minutes, as with standard snares. While some practitioners consider hold traps more humane, in part because they are size and species specific, we believe ungulates expire more quickly and humanely without stops. Use of lethal snares will be minimal, if any, and in extremely limited situations when other

capture methodology have failed. Due to the topography, vegetation and few trees, the EA must be realistic, comprehensive and flexible in methodology. This requires a range of reduction techniques to safely and humanely satisfy NPS mandates.

7. Use of Leg Snares to Trap Animals

Comment: The HSUS also has serious concerns over the humaneness of leg snares. Among coyotes trapped in leg snares for no more than 24 hours, 25% and 80% of coyotes trapped in Fremont and Novak snares, respectively, exhibited maceration of soft tissue; 50% of those trapped in the Novak snare had limb fractures; and edematous swelling and/or hemorrhage occurred in coyote limbs trapped by either the Fremont or Novak snare. The only information in this study pertaining to ungulates is provided on non-target deer that were caught in one type of snare: “All 5 deer caught were taken in Fremont snares. These animals seemed to struggle a great deal, as evidenced by muscle bruising in all 5, and dislocation of the fetlock joint in 1.” Sheep and goats will be similarly likely to struggle in leg snares. Therefore, we strongly urge the NPS not to use leg snares. At minimum, the Final EA must indicate whether snares designed to minimize injury—e.g. leg snares coated with plastic—will be used. Whether such modifications actually benefit the welfare of a given species may be debatable, but certainly the Final EA should address the ways in which the NPS will seek to minimize the injuries, pain, and distress produced by this and other methods of control.

One clear method of reducing pain and distress of trapped animals is the use of a short trap-check time and we appreciate the provision in the EA that all traps and snares will be checked at “maximum 12-hour intervals (EA, p.22).” While more frequent monitoring of traps and snares—such as every 2 – 6 hours—will certainly be preferable from an animal welfare standpoint, 12 hours is a reasonable maximum. However, there appears to be a typo on p. 22, which indicates that guidelines for trapping goats and sheep include trap inspection “within 12 hours minimum” rather than a maximum of 12 hours. The Final EA must clarify that traps and snares will not be left unattended for more than 12 hours.

Response: The NPS has modified the Goats and Sheep Implementation Plan in Chapter II on Page 22 of the Final EA to clarify intentions regarding the use of neck snares to trap animals. Live traps are the preferred method of capture; leg snares will not be used, neck snares may be employed in conjunction with independent bait stations. Traps and snares will be inspected at maximum 12-hour intervals; often trap inspections will be every 6 hours or more frequently. Initial trapping typically yield the highest ratio of animals collected over time, a period days or weeks, and this drops over time until trapping effort in the area is no longer cost effective.

Neck snares will only be considered for deployment under rare circumstances and in remote locations. Neck snares will be constructed using slip-wire and secured close to the ground along established corridors frequented by goats and remote from human activity. Wildlife conservationists consider these to be live traps for virtually all targeted wildlife captured.

The Draft EA did not specify the precise snare type for possible use. Because HSUS mentions snare use with stops or plastic or rubber coating, we categorically reject these materials and styles. It was determined that the use of snares with stops, and use of plastic or rubber-coated snares would be inappropriate. When snares or captive traps are used, a potential for injury, up to and including death remains a possibility. A combination of approaches to methodology is necessary to adequately represent the range of situations wildlife reduction experts will face. This comprehensive approach is favorable to one employing a single method over a wide range of locations and diverse habitats. The humane

treatment of wildlife, including those selected for overland transport, is of paramount importance. Many live-captured animals will later become euthanized and utilized at wildlife ranches. Some will be euthanized remotely, and donated for utilization.

The live-capture and snare techniques proposed in this program are relatively species specific. These methods are more expensive to obtain and use, but are preferred over leg snares or kill traps, because they are more humane when used properly. Possible nontarget (incidental) wildlife includes the following non-native species: white-tailed deer and donkeys. These two exotic species have been selected for extensive population reduction programs, albeit their NEPA compliance documentation has not begun. Nevertheless, few if any of these species are expected to be found in the traps or snares if these methods were employed. Capture of burros will be extremely rare and those will be released. Other non-native species will be humanely collected. Again, the humane treatment of all island wildlife is of paramount importance, and a comprehensive methodological approach is favored as the most humane, safe and efficient means to accomplish NPS management objectives.

Chapter II includes: “Both target and non-target species are generally found uninjured or only moderately injured in the snare. A minor amount of injury or trauma is impossible to avoid, while every reasonable measure will be employed to reduce injury and suffering of both target and incidental wildlife captured throughout the reduction program.”

Initially, traps represent the highest number of animals collected for the least amount of human effort. Therefore, a few different models or techniques will be employed to collect goats and sheep; including single and multiple (corrals) live traps. Selective neck snares may be considered as a secondary control alternative in remote habitats where other primary collection methods have failed. Trap success is a function of natural food availability, environmental conditions, goats and sheep densities and distribution, trap placement, trap design, age and previous trapping activity (Fox and Pelton 1977). Portable, chain-link single-catch traps have been the most practical and efficient traps for capturing goats and sheep in many areas. These may be constructed for remote use in this program, in addition to the multiple-catch corral trap envisioned to capture the majority of trapped goats and sheep in this program. Live-capture traps may be assembled in the field and dismantled for movement to a new site. While live capture traps are more expensive to obtain and use, they are preferred over kill traps.

Rigid, heavy gauge welded wire panels measuring 4 x 8 feet will be wired together and fastened to an independent, one-way door. Three panels form a triangular corral trap capable of holding several animals. Additional panels may be joined to increase the corral size. Pre-baiting with no door may be necessary.

Although trapping is an effective method of control and can account for the majority of goats and sheep removed from a Park, it has some limitations. For example, some animals may be “trap shy” and may not enter traps regardless of bait type or trap location. In addition, it is difficult or entirely unfeasible to transport traps to some areas of the Park, due to the remote and rugged terrain or without causing serious impacts to designated natural areas. Finally, in terms of human-hours, trapping is extremely labor-intensive. Therefore, the most cost-effective long-term method for controlling goats and sheep in the Park is a combination of trapping and shooting.

Live traps and snares may be used in conjunction with as well as independent of bait stations. Traps and snares will be inspected at maximum 12-hour intervals. Initial trapping typically yield the highest ratio of animals collected over time and this value drops over time until the program is no longer cost effective.

If used, snares will be constructed using slip-wire and secured close to the ground along established corridors frequented by goats and sheep and remote from human activity. Wildlife conservationists consider these to be live traps for virtually all targeted wildlife captured. However, white-tailed deer sometimes behave erratically and may readily suffocate and quickly (and humanely) die. Capture and disposition of nontarget wildlife is addressed in a separate section immediately above. Again, efforts throughout all three-program phases will focus on preventing (minimizing) non-native animals from encroachment to VINP. This is of particular importance during the indefinite time frame of Phase III.

8. How Collected Animals will be Euthanized

Comment: The EA is not clear on the manner in which collected animals will actually be killed. Though some mention is made of sending some trapped animals to a slaughterhouse, and it is clear that some individuals will be shot (i.e. those not caught in traps), it is not clear whether all live-trapped or snared sheep and goats will be sent to a slaughterhouse (or to their owners if ear-tagged), or whether some will be shot or otherwise killed in the field (in the location in which they are trapped). In a phone conversation, R. Boulon (12/12/04) indicated that all live-trapped animals will be either returned to their owners (if ear-tagged) or transported alive to a slaughterhouse. However, the EA (p. 22) indicates that, in addition to killing goats and sheep via shooting (without trapping), “a silenced pistol will be employed to safely dispatch some corralled animals.” The Final EA should clarify whether any uninjured live-trapped animals will be killed in the field by shooting or other means. If uninjured live-trapped animals will be killed via shooting—rather than killed via chemical euthanasia, transported to the owner (if ear-tagged), or transported to a slaughterhouse—this decision must be justified in the Final EA. The Final EA should estimate (possibly based on reduction programs in other Parks) the percentage of animals that will likely be shot in the field (by Virgin Islands Department of Agriculture, the U.S. Department of Agriculture, NPS, or Virgin Islands Department of Natural Resources officials), transported alive to their owners (if ear-tagged), transported alive to a slaughterhouse, or killed by other means. The means of transportation must also be specified. The Final EA must also specify whether trapped and transported animals will be without water and/or food for any period of time.

Response: Trained and certified animal control agents will collect goats and sheep on the ground or from temporary tree stands, with the possible use of the techniques and technologies described in the Draft EA. USDA APHIS and NPS personnel will be qualified and certified for the centerfire rifle or shotgun used to dispatch goats and sheep, a silenced pistol may be employed to safely dispatch some corralled animals. Firearms used for this program will be equipped with telescopic scopes and silenced muzzles (except the shotgun). Transportation of field personnel may include trucks, jeeps, horses, all terrain vehicles and boats. Temporary tent camps may be established in remote areas.

Again, because eradication is unfeasible, our goal is to humanely reduce goat and sheep populations within the park and keep them low. A comprehensive and multifaceted methodology must be analyzed and implemented to ensure success and accomplishment of NPS management directives. Extensive vegetation cover and steep and largely inaccessible terrain, results in an expensive and challenging operation to reduce populations of destructive, non-native ungulate species. As R. Boulon emphasized (12/12/04), tagged animals will generally be returned to their owners the first time, and perhaps the second time they have been captured. Animals captured a third time will be either donated for personal consumption, or humanely euthanized by the most humane and economical means available – using a rifle. When conducting wildlife reduction operations one must consider many views, including the most humane treatment of captured animals, the most realistic, practical and efficient methods to move captured wildlife, and the final disposition of captured wildlife. Goats held over three hours

before overland transportation will be provided drinking water. Goats held overnight will be provided food and drinking water.

Explanations were included and reiterated in detail in the EA to describe the Preferred Alternative and to explain the serious and extensive lengths the NPS and USDA Project Coordinators intend to go to in order to (1) avoid killing any goats or sheep, (2) maximize the number of animals released to wildlife ranches on St. John, (where most will subsequently be euthanized and utilized), and (3) use the more stressful methods (such as snares and dogs) only as a last resort after all other methods have failed.

As a 90-year-old public trust agency, the NPS is required to analyze all reasonable alternatives. The NPS is also obligated to treat wildlife humanely in all respects, including the capture, transport and (if necessary) lethal disposition. The NPS has a responsibility to utilize taxpayer funds in a reasonable and prudent manner, and develop and implement methods to efficiently and reasonably accomplish agency mandates. It is necessary to balance multiple use scenarios which create the need for compromise. Because of topography, distances, expense and subsequent limit of boats, trucks and trailers, limited access or complete inaccessibility, and insufficient human resources, the humane transport of 100% of the captured animals is impossible, unrealistic, impractical and otherwise inhumane. As stated in the EA, the transported livestock will be euthanized.

Estimating the percentage of animals likely to be shot in the field, transported alive, transported to a slaughterhouse or killed by other means would be speculation, at best. These estimates would be inaccurate and unnecessary for our purposes. Suggesting this estimate be made based on reduction programs in other parks is unrealistic and unfeasible, as the values and associated parameters are not comparable and therefore extrapolations could not be made. Our estimate would likely change over time as well, so specifying the time within which the estimate is valid combined with the fact that some animals will be soon dispatched when turned over to the rancher further complicates and dilutes the response. The question mentions VI DNR and the numbers of animals we expect they will dispatch. DPNR personnel are not permitted to dispatch livestock within the park, thus the question is not applicable. If the commenter was asking about the number of animals VIDA may be dispatching then our response is the same as for DPNR. Only certified NPS or APHIS personnel are authorized to dispatch animals.

It is impossible to determine who owns the livestock, the park suspects some ranchers may come forward to request free animals, from locations where trailers can be used and accessible from the bush. Only ranchers participating completely in the Animal Registration and Impoundment Program are authorized to receive captured livestock, therefore the NPS has no reason to believe ranchers will dishonestly approach the capture team stating that his goats have been captured. Also if livestock ranchers knowingly keep goats or sheep inside the park then they are likely not going to tag them. In more remote areas where humane transport to ranches is unfeasible and thus impractical or impossible, captured animals would be dispatched and utilized. It is expected that a vast majority of captured goats and sheep will be transferred to livestock ranches with minimal recapture.

Given the totality of the setting, topography and location of VINP, it is necessary to fully develop alternatives, including the consideration of possible (albeit rare) use of tracking dogs or snares and the possible use of immuno-contraceptives for this project. The EA makes numerous mention of the

unfeasibility of eradication of goats or sheep from the park. Therefore, mandates must be balanced with available methods and accomplished as much as possible (the greatest reduction) with the least impact to the wildlife.

Large-scale wildlife collection operations will be closely coordinated with the public, Virgin Islands Territorial Government officials, in particular VIDA, NPS Law Enforcement, Interpretation Rangers, and Maintenance personnel. Resident and visitor safety is of paramount importance, along with the humane treatment of wildlife during all program operational phases. Direct reduction activities will be well organized by NPS and USDA Program Coordinators and Law Enforcement authorities. NPS Law Enforcement personnel and others will ensure proper closure and visitor clearance from each area, as necessary. Personnel safety will be of greatest concern at all times. Field personnel will be equipped with both a two-way radio and cellular telephone linked through the newly renovated VINP radio system. A full-time NPS dispatcher will ensure smooth communication between all essential field personnel. Most collections will be small-scale operations using single or corral traps.

Biological data will be collected from all captured goats and sheep. Collected goats and sheep will be turned over to VIDA in many cases, for final disposition with ranchers or for euthanization and public utilization. Some will be donated by the NPS to island residents strictly for personal (private consumption). Only ranchers participating in the VIDA Animal Registration and Impoundment Program qualify to accept captured livestock. In remote locations where transport is impractical or impossible (e.g. Brown Bay bottom-portion), euthanized goats and sheep will be treated with lime and expected to completely decompose within one week. This treatment will occur at a minimum of 50 feet from established VINP trails and an equal minimal distance away from major drainage guts or saltponds. Lime accelerates the rate of decomposition in the warm, moist subtropical weather; a 100-pound carcass often completely decomposes within 5 days. On rare occasions when overland transport is impractical and topography and wetland proximity prevent liming, collected animals will be brought to sea, weighted and released a minimum of one nautical mile from the shore.

VIDA veterinarians are certified by the USDA to inspect livestock for public consumption for use in a hospital or prison. Livestock consumed by private individuals does not require VIDA or USDA inspection, certification or approval. Residents accepting donated meat from the NPS for private consumption will be required to sign a form stating the guidelines for handling the meat and reiterating its' use for private consumption (not for resale). Because the public has had a long association with capturing and utilizing goats and sheep, the NPS has spent considerable energy to ensure collected animals could be legally and safely provided to them (directly) for private utilization, and for public utilization through VIDA, in some special circumstances. Field supervisors will ensure personnel involved in data collection or butchering operations wear protective gloves and avoid contact with reproductive tracts or fetuses of female goats or sheep. VIDA concurs with this protocol.

9. An Additional Alternative, Remove Goats to a United States Wildlife Sanctuary

Comment: The Fund for Animals is a national animal protection group with over 200,000 members and supporters throughout the United States. In addition to over our advocacy initiatives, the Fund for Animals operates the Black Beauty Ranch, a 1,620-acre wildlife refuge in Murchison, Texas. In response to the Virgin Islands National Park Sustained Reduction Plan for Non-native Goats and Sheep, we would like to propose an additional alternative to the trapping and killing of these animals.

In 1979, The Fund for Animals founded Black Beauty Ranch as a home for burros rescued from the Grand Canyon in response to a National Park Service plan to exterminate them. We worked closely with the National Park Service to implement a non-lethal approach to managing burros in the Grand Canyon. The rescued burros have been able to live their lives in a healthy and peaceful setting at Black Beauty Ranch.

The trapping and killing of wild animals is a cruel and inhumane practice. With non-lethal alternatives, we encourage the Park Service to consider allowing some of these animals to survive. We respectfully urge the Virgin Islands National Park to consider a similar option for non-native goats and sheep within the Virgin Islands National Park. Specifically, we are asking that some of these animals be relocated to wildlife sanctuaries to live out their remaining lives. This will be a tremendous undertaking and the Fund for Animals will be happy to provide assistance.

There are a number of facilities that take in exotic hoofed animals such as Black Beauty Ranch (Texas), mini-pigs (Virginia), Performing Animal Welfare Society (California), and the Rocky Mountain Wildlife Conservation Center (Colorado). These refuges were established to help animals whose lives are threatened, such as the exotic goats and sheep in the Virgin Islands National Park. Options for relocation include several phases combined with sterilization and contraceptive use to ensure zero population growth. Each phase a significant portion of animals could be relocated to wildlife refuges and sanctuaries until they are all removed. This will allow the Virgin Islands National Park to achieve a goal of reducing exotic goats and sheep in a humane manner.

Thank for your time and consideration of these comments and our proposed non-lethal alternative. Please do not hesitate to contact me with any questions or for additional information. Look forward to hearing from you.

Response: The referenced Fund for Animals program is extremely successful and provides a viable, realistic opportunity for a great number and diversity of wildlife to live out their natural lives in a sanctuary. Many of the animals arrive from distant lands including other continents. Their critical review of the EA was welcomed. One EA author contacted their respondent to clarify some key points in the suggestion; this conversation resulted in their essential withdrawal of the suggestion to relocate goats to a Texas wildlife sanctuary. This change occurred when the FFA understood the full context of the NPS preferred alternative discussed in the Draft EA, and the parameters within which the project is occurring in the Virgin Islands. Clarified were the following facts: (1) the goats and sheep are ancestors of those released or escaped from local wildlife ranches where they are euthanized and utilized, (2) the vast majority of collected animals will be humanely provided to wildlife ranches, (3) the small proportion of animals unsuitable for Item 2 above will be humanely euthanized and utilized, and (4) only a small percentage will be in locations where item 3 above is impractical or impossible.

Captured animals which cannot be humanely transported to livestock ranches or directly euthanized and transported for personal consumption on St. John are expected to be few in number. However, this number would not be considered for transport over 1000 ocean miles and trucked another several hundred miles. The trip would be an expensive challenge with questionable humanity. Finally, those animals who survive the expensive and intensive sea journey would be expected to live but a few years. Long distance transport such as this might be most appropriate for long-lived species or extremely rare and endangered wildlife. To accomplish this monumental, expensive and logistically challenging task on a recurring basis, for relatively short-lived livestock, from extremely remote locations, challenges logic and humanity. Again, a majority will be relocated to wildlife ranches in St. John, but some must be utilized in the field rather than at the livestock ranch for logistical and humanity reasons. Only a relative small

percentage is expected to be euthanized and left unutilized. Because they may well die, or otherwise suffer for days in transit, the preferred and humane alternative is also the practical approach: humane removal from Park lands.

In summary, the lead author of the EA spoke with a FFA official to offer clarification. When the FFA official understood the full context of the EA, and especially the final disposition, the FFA official concurred with NPS that the most humane option for the vast number of goats is what the NPS proposed as the Preferred Alternative in the Draft EA. Much of what the author informed the FFA representative was in the Draft EA but the FFA was unaware of the information. A majority of goats are expected to be live-captured and relocated to wildlife ranches in St. John or St. Thomas, provided the ranchers adhere fully to the USVI Animal Registration and Impoundment program. The FFA official and EA author were in full agreement this was preferable to having the goats shipped to Texas and trucked to a sanctuary. Neither the FFA nor the NPS have the funds to conduct this operation, but both agreed if some funding were available, the animals would be better off staying in the Virgin Islands, because of the (1) duration of travel, (2) hardship to the animals and (3) expense of travel (and holding beforehand), (4) challenging logistical concerns, (5) relatively short-lived, and (6) extremely common species. Additionally, those funds would then be unavailable for other FFA or NPS purposes.

We also discussed the final disposition in extreme detail and agreed some goats would require shooting. We agreed the goats and sheep originated as ranch animals which by definition are subject to slaughter. The FFA official was pleased that a majority of animals are expected to be removed live from the park, but concurred that in some remote locations they would be dispatched and removed for consumption. This was believed more humane than transporting some of the animals live, over long, costly distances, only to dispatch them upon arrival at the ranch. Finally, we agreed that some extremely remote locations necessitated the use of lime or sea burial, because the animals could not be humanely brought out alive not logistically removed after dispatching, because to do so is impractical.

For these reasons, the NPS rejected the primary suggestion from FFA as the result of the conversation described immediately above. FFA essentially withdrew the proposition when they fully understood our rationale, objectives, and the final disposition. Their suggestion was essentially withdrawn because FFA, armed with a more complete understanding of the methodology to be used, and scope of logistics and practicality, ultimately agreed with the NPS preferred alternative